



BENCHMARKS

The University of North Texas Computing Center Newsletter

VOLUME 11 NUMBER 5
July/August 1990

A History of Computing at UNT

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

Since we are celebrating our centennial this year at UNT, it seems appropriate to look back at the history of the Computing Center. Obviously, computers were not used here back in 1890, so there was no need for a Computing Center at that time. Time and technology, however, changed all that.

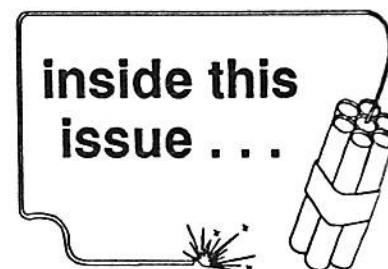
In the Beginning ...

Computing at the University of North Texas got its start in 1962 when the University (it was called *North Texas State University* then ...) purchased an IBM 1620 to support academic users. According to Richard Harris, Associate Vice President for Computing, J.B. Harvill was teaching a numerical analysis class in the Math Department and had arranged to have the class run some programs on an IBM 1620 that was owned by Texas Instruments in Dallas. Meanwhile, a committee was formed at NT to study the feasibility of the University acquiring its own computer. As it turned out, the NT committee recommended that the University acquire an IBM 1620 of its own. This was done, and Gene Milner from Texas Instruments was hired to administer it. Thus, the numerical analysis class ended up running their programs on a computer here instead of at TI.

Gene Milner left NT after only a year, but while he was here he hired two young men who had been students in that numerical analysis class, Richard Harris and Charlie Ellis. At the time of their employment, they were both working half-time in the position of programmer/operator. Soon after the employment of Harris and Ellis, another bright young man from the Math Department was hired to be a programmer/operator. His name was Jerry Waldon.

Richard Harris was appointed Acting Director of Academic Computing in 1963. At this time, academic and administrative computing were two separate entities,

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The Centennial Issue:
History Lives Inside These Pages!



SERVICES AVAILABLE TO USERS OF THE UNT COMPUTING FACILITIES

The UNT Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone Numbers:

Computing Center: (817) 565-2324
Help Desk: (817) 565-4050
Micro Support: (817) 565-2316, 565-2319
Graphics Lab: (817) 565-3479
ISB I/O Area: (817) 565-3890
BA I/O Area: (817) 565-2350

All personnel listed below can be contacted either by calling the Computing Center or by sending them electronic mail on MUSIC/SP (ID-codes follow each name. All IDs are on BITNET node UNTMUSIC).

Benchmarks - Claudia Lynch (AS04)

Information & ID-Codes; Disk Space Problems - Theresa Russell

Statistical/Research Support - George Morrow (AS01), Panu Sittiwong (AC09), Phanit Laosirirat (AC44)

Academic ADABAS/COM-LETE - Cathy Hardy (AC55)

CRSP & COMPUSTAT Problems - Panu Sittiwong (AC09), Phanit Laosirirat (AC44)

Student Programming Problems - CSCI Dept., GAB Room 550; BCIS Dept., BARoom 152

Problems with JCL, Passwords, or Operating Systems; or Communication/Terminal Problems - Help Desk

Data Entry; Test Scoring & Analysis - Betty Grise

Administrative Applications - Coy Hoggard

Printout Retrieval - ISB or BA I/O Operators



DIALING-UP UNT COMPUTERS OVER THE TELEPHONE

Phone numbers for the Local Area Network (LAN) are:

300-2400 BAUD: (817) 565-3300
 300/1200 BAUD: (817) 565-3499
 300-9600 BAUD: (817) 565-3461
 300-9600 BAUD: D/FW METRO 429-6006, 429-9314

Area code 214 must dial 817 before the METRO #.

The numbers that accommodate multiple baud rates have an autobaud feature that requires you, once connection with the remote modem is made, to hit the <RETURN> key repeatedly so that the receiving modem can determine the appropriate baud rate. When you have established a communications link, the # prompt will appear on your screen and you can enter one of following CALL commands to connect with the computer of your choice.

CALL 8040 connects with the HDS/8083 (supports line editing or PCWS). Operating environments available are: MUSIC/SP, VM/CMS.

CALL 3270 connects with the HDS/8083 through a 3270 protocol converter (supports full-screen editing). Operating environments are: MUSIC/SP, VM/CMS, ADABAS/COM-LETE

CALL DEC connects with the VAXcluster (VMS)

CALL 780 connects with the Research VAX (Unix)

CALL 3000 connects with the Libraries' HP-3000 (Bibliographic database).

CALL 6800 connects with the NBI (Unix)

Communications Settings			
LAN addresses	Data Bits	Parity	Stop Bits
DEC, 3000	8	N	1
8040, 3270, 780, 6800	7	E	1

HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : Summer 1990*

Location	Days	Times
Computing Center RJE	Sunday Monday Tuesday-Saturday	Noon-Midnight 7 a.m.-Midnight 7 a.m., Tues.-Midnight Sat. (Open 24 hours/day)
ISB 110 Terminal Area	Sunday Monday-Thursday Friday Saturday	1 p.m. - 10 p.m. 8:00 a.m. - 10 p.m. 8:00 a.m. - 6 p.m. 9 a.m. - 6 p.m.
College of Business	Sunday Monday-Thursday Friday, Saturday	Noon-11:45 p.m. 8:15 a.m.-11:45 p.m. 8:15 a.m.-7:45 p.m.
GAB 550C	Sunday Monday-Thursday Friday Saturday	4-11 p.m. 9-11 p.m. 9 a.m.-3 p.m. CLOSED
Graphics Lab	Sunday Monday-Thursday Friday Saturday	Noon-10 p.m. 7 a.m.-10 p.m. 9 a.m.-6 p.m. Noon-6 p.m.
Willis Library	Sunday Monday-Thursday Friday Saturday	1 p.m.-10 p.m. 7:30 a.m.-10 p.m. 7:30 a.m.-9 p.m. 9 a.m.-9 p.m.

*Hours may vary. Check MUSIC/VAX News and/or posted schedules for exceptions.

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Computing Center Chronology

- 1962 IBM 1620 purchased to support academic users. The 1620 had 20K, which works out to be about 10K bytes as we know it now. The printer was the operator's console, which was an IBM electric typewriter. The first Director of Academic Computing, Gene Milner, was hired. His office, and the IBM 1620, was located on the first floor of the Business Administration Building, in the area now occupied by the BA RJE and microcomputer labs.
- 1963 Gene Milner left to work for IBM. Richard Harris was appointed as Acting Director of Academic Computing.
- 1964 IBM 1440 purchased to perform administrative data processing. Richard Harris appointed Director of Computer Systems. Jerry Waldon appointed Associate Director of Academic Computing and Coy Hoggard hired to be Associate Director of Data Processing. Harris, Hoggard and the IBM 1440 were housed in the basement of the Administration Building.
- 1969 Computing personnel consisted of Richard Harris, Director of Computer Systems; Jerry Waldon, Associate Director of Academic Computing, who supervised one secretary/data entry operator and several part time people; Coy Hoggard, Associate Director of Data Processing, who supervised one programmer/analyst, one programmer, one computer operator, one keypunch supervisor, and three keypunch operators. The total operating budget for the Computing Center was \$163,738.
- 1970 IBM 360/50 CPU acquired to support academic and administrative computing. The original configuration of the 360/50 was one multiplexor channel, one selector channel, 256K core memory, a 1403 line printer, a 2540 card reader/punch, three 30KB tape drives, and five 2314 single density disk drives. The original operating system was OS/MFT/HASP supporting a maximum of three user partitions. Ray Sanders hired as Operations Supervisor.
- 1971 First Computing Center newsletter published, called *NTSU Computing Center Newsletter*. The editor was Jerry Waldon.
- 1973 The capacity of the IBM 360/50 was doubled to a capacity of 512K bytes. The 7-track tape drive was removed, leaving three 9-track tape drives.
- 1974 Several administrative inquiry/update terminals were connected to the 360/50. CICS used for on-line transactions.
- 1976 An HP-2000 minicomputer was purchased to provide low cost, BASIC language only, timesharing terminal support. SPSS was purchased with a faculty research grant through the efforts of Dr. Jim Glass of the Political Science Department.
- 1978 The capacity of the IBM 360/50 was doubled again when the leased CPU was replaced with a purchased unit with a full megabyte of core memory. Sixteen Apple microcomputers were installed in the Computer Science Department. Technical Support section created, Jerry Waldon became Associate Director of that group. Douglas Lillard hired as Associate Director of Academic Computing.
- 1979 The IBM 360/50 was upgraded for the last time when an additional bank of disk drives were added. OS/MVT replaced OS/MFT as the batch operating system. A remote job entry station (RJE) was installed in the Business Administration Building.
- 1980 First issue of *Benchmarks* was published. The editor was Claudia Putnam. Sandy Franklin, who was an Administrative Assistant at the time, typed it. Lynne Adkins, in Computer Operations, drew the logo. A National Advanced System AS/5000 4 megabyte CPU and 3.5 billion byte disk storage subsystem was purchased. Academic disk storage was set to 1.1 billion bytes, 4.7 times that available on the IBM 360/50. VM/370 installed – memory requirements no longer used to determine job class. SAS installed for the first time. MUSIC acquired as the academic interactive operating system for the AS/5000. Access to MUSIC was gained through 300 baud asynchronous dial-up terminals and 1200 baud hardwired terminals. The College of Business and Computer Science "Computer Centers" formed. Doug Lillard left the Computing Center to work in private industry.
- 1981 Thomas Wm. Madron, Ph.D., hired as Manager of Academic Computing. Computing Center RJE installed in the ISB. TI-745 Silent 700 terminals available for check-out from the Computing Center to faculty members. Jerry Waldon resigned as Manager of Technical Support to work in private industry, Steve Minnis promoted into that position.
- 1982 Construction of the cable television based local area network began. Automated tape library management system (TMS) acquired.

GENERAL INFORMATION

- 1983 Construction completed on the computer rooms on the 5th floor GAB. Three VAX 11/780s purchased and installed in the new facilities on the 5th floor GAB. Two of the machines are used for general timesharing and managed by the Computing Center. The third is used for research purposes and is managed by the Computer Science Department. Kim Stickney hired to be the VAX Administrator. National Advanced Systems AS/8040 and AS/6650 replaced the AS/5000. The AS/8040 used primarily for instruction and research, the AS/6650 used primarily for administrative computing. Began development of Student Information Management System (SIMS). The Sytek local area network became operational. SPSS-X installed. The Computing Center is reorganized so that there is a Manager of Information Systems (Coy Hoggard) and a Manager of Computer Services (Tom Madron). Reporting to the Manager of Computer Services was an Academic Services Manager (vacant), Computer Operations Manager (Ray Sanders) and Technical Support Manager (Steve Minnis). HP2680A laser printer capable of printing 45 pages per minute installed. "Protocol Converted" ports added to the AS/8040. Eight metro lines installed. Sixty-four terminals installed on the 5th floor of the GAB and in the BA, twenty-four terminals replaced the IBM 029 keypunch machines in the ISB.
- 1984 OS/MVS/JES2 operating system replaced OS/MVT on AS/8040 and AS/6650. Became possible to create VSAM datasets. Four megabytes of memory added to the AS/8040 bringing the total capacity to twelve megabytes. Dr. Bob Brookshire promoted to Manager of Academic Computing. The HELP DESK in ISB 110 established. Dave Molta hired as a part-time employee to administer the HP-2000 and do statistical consulting.
- 1985 NTSU became node in the Tager microwave network. Scott Barber publishes memorable article in *Benchmarks* linking fishing, kissing and computers. Human Resources Management Information (HRMIS) project begun. City power outages result in UPS battery fire in the GAB. AS/8040 upgraded to sixteen megabytes of main memory, making it an AS/8043. Kim Stickney returned to work for Digital Equipment Corporation in Massachusetts. Ron Brashear hired into the position. NTSU became a BITNET site. Richard Harris appointed Associate Vice President for Computing.
- 1986 VAX 11/780s upgraded to 785s and configured into a cluster. Graphics Lab opened in the basement of the ISB. NAS/8043 upgraded to a dual processor NAS/8083, increasing academic CPU power 80% and administrative CPU power 211%. Keypunch machines replaced with microcomputers in the Data Entry section of the Computing Center. HP-2000 moved to the Physics Department.
- 1987 Tom Madron left to become Executive Director of the New Jersey Educational Computer Network (NJEEN). Bob Brookshire left to become Director of Academic Computing Services at James Madison University in Virginia. The Computing Center reorganized with Dava Molta (Acting Manager of Academic Computing Services), Coy Hoggard (Manager of Administrative Information Systems), and Steve Minnis (Manager of Computing Services) reporting to Richard Harris, the Associate Vice President for Computing. HP-2680A laser printer installed in the BA. NTSU joined TEXNET.
- 1988 Dave Molta named Manager of Academic Computing Services. Ron Brashear went to work for Mobil Oil Corporation. Billy Barron named VAX System Manager later in the year. UNT BBS implemented on the VAXcluster. Project Eagle, the NTSU and GTE voice response project, begun. North Texas State University became the University of North Texas. Eight 2400/1200/300 BPS modems installed on the metro lines. UNT became an ARPANET node.
- 1989 Title changes went into effect for the following individuals: Steve Minnis became Director of Computing Technical Services, Coy Hoggard became Director of Administrative Computing, Dave Molta became Director of Academic Computing. The official count of employees for the Computing Center was 76.75 Full Time Equivalent. The total operating budget for the Computing Center was \$3,776,270. A Microcomputer Support group, reporting to the Director of Academic Computing, was formed from the consolidation of academic and administrative microcomputer support groups. HP ScanJet installed in the Graphics Lab. Six IBM AT compatible PCs and six Macintosh SEs linked to a file server on a Novell Local Area Network installed in ISB 110. Desktop laser printing available from ISB 110 to an Apple Laserwriter II and an HP LaserJet II. The last keypunch machine available for public use was removed from the area near the ISB RJE. ANUNews and Netware VMS installed on the VAXcluster. VAXcluster connected to USENET. Sixteen 2400 baud modems installed on local dial-up lines.
- 1990 An additional NAS/8083 mainframe installed to support academic computing in a dual processing configuration. Administrative computing done in dual-processing mode on the NAS/8083 already in place at NT. NAS, bought out by Hitachi, changed its name to Hitachi Data Systems (HDS). Academic Computing Services reorganized so that Kyle Capps is Microcomputer Support Manager, Philip Baczewski is Mainframe User Services Manager, Billy Barron is VAX System Manager, and Claudia Lynch is Documentation Services Manager. Willis Library Microcomputer Lab opened. VAX 6310 replaced 11/785s.

History continued from page 1.

with administrative data processing being done on IBM unit record (card) equipment.

In 1964 Harris was named Director of Computer Systems. This coincided with the University's acquisition of an IBM 1440 for administrative processing. Jerry Waldon became Associate Director of Academic Computing and Coy Hoggard was hired to be Associate Director of Data Processing. From 1964 to 1970 administrative (data processing) and academic computing remained two separate entities with Harris being responsible for both. His office was located in the basement of the Administration building, where the IBM 1440 was housed.

The Computing Center as We Know it Today...

The Computing Center as we know it today came into being in 1970, with the acquisition of a leased IBM 360/50. Academic and Administrative Computing joined forces, and offices and computer equipment were moved to the Information Science Building.¹ Computer equipment has been upgraded and personnel have been added throughout the years, attempting to keep pace with, but frequently a little behind, the needs of the University community.² You can take a "walk" through Computing Center history by reading the "Chronology" beginning on page 3.

¹Prior to that time, the computer and support personnel for Academic Computing were housed in the Business Administration Building, in the same areas on the first floor that now house the BARJE and microcomputer labs.

²As you might suspect, budgetary constraints are responsible for this lag.

Why Is MVS So Slow?

By Dr. Philip Baczewski, Mainframe User Services Manager (BITNET: AC12@UNTVM1)

If you have been submitting batch jobs to the MVS system, you have undoubtedly noticed that the turn-around time for processing your job seems longer than it has in the past. This condition is a result of several factors, the most influential of which is the current upgrade process to the VM system. Because we now have three levels of operating systems (VM/XA, VM/SP, and MVS/SP) more total overhead is generated by those systems. MVS seems to come out on the short end of the stick.

The temporary reduction in MVS's computing power has highlighted a situation which might ordinarily have gone unnoticed: that is, the nature of jobs processed under MVS has changed dramatically in the last five years. Many more SAS and SPSS jobs are being run which require large amounts of CPU and storage resources, and which perform large amounts of I/O. When several of these jobs are running at the same time, the MVS system must spend much of its processing time shifting resources between jobs.

The upgrade process that we are now undertaking will greatly improve the performance of all the mainframe operating systems. This current situation is a necessary part of the process - it is necessary to give up some performance now in order to gain system performance in the future. We chose the summer terms for the upgrade period because, traditionally, this has been a time when processing demands are at their lowest during the year. Steps are also being taken to try to better "tune" the MVS system to its current environment. There are some steps that you can take to improve your batch turnaround and lessen the load on the system:

- Be sure to adhere to the Academic Computing policy of having not more than 5 jobs executing or waiting on the input queue at the same time.
- Although not normally recommended, if you must submit multiple SAS or SPSS jobs, use the same name (on the job card) for all of them, so they cannot execute at the same time. Often, if two or more of your jobs are executing and using the same input data file, they can be contending for the same resources. In this case, only one job will actually be able to do processing at a time, leaving the others in the MVS "initiator" not actually doing any work, yet preventing other jobs from running.
- Don't overestimate when specifying the amount of time, number of lines, and amount of region space your job will need. The JES2 part of the MVS system prioritizes jobs based, in part, on these estimates - if you overestimate, your job could be given a lower priority unnecessarily.
- Double-check your program syntax before submitting your job. Programming errors are sometimes inevitable, but the more you catch before you submit the job, the less the likelihood you will have to submit it again.

By following the above guidelines, you may be able to improve the turn-around on your own batch jobs, and maybe help improve the overall situation. The Computing Center realizes the necessity for improving performance on the Academic mainframe system, and much work is currently being done towards that end. Please realize that the current situation is a temporary one while the new system is put into place.§

ARPANET is Gone!

*Old Networks Never Die,
They Just Fade Away*

By Billy Barron, VAX System Manager
(BITNET: BILLY@UNTVAX)

On June 1st, ARPANET was deinstalled after 21 years of service. ARPANET was started in 1969 as the Advanced Research Projects Agency's (ARPA) network. The purpose of the early ARPANET was to provide resources to DoD contractors. This early network utilized 56Kb/sec leased links and a protocol known as NCP. In those days this was a revolution in Wide Area Networking technology.

In the mid '70s it became apparent that the NCP protocols would not be able to handle the needs of networks. At this time, development of the TCP/IP protocols to meet the new requirements. Eventually, NCP was totally phased out and TCP/IP became the protocol of the ARPANET. In 1983, the next major step was taken when ARPANET was split into two networks. One of these continued to be called ARPANET and focused on research. The other was called MILNET and became the military production network.

In the latter '80s, ARPANET's success started its downfall. The network backbone still depended on the same 56Kb/sec circuits it had in the 60s. The problem was that the network had grown greatly beyond the bandwidth available. Also, the DoD was not happy about the very high usage of the network for non-defense matters. The National Science Foundation agreed during this time to build a new high speed backbone (NSFNET). During the last couple of years, the NSFNET has become increasingly important while the ARPANET has waned.

THE BITNET CONNECTION

By Billy Barron, VAX System Manager (BITNET: Billy@UNTVAX)



This Column is a continuing feature of Benchmarks intended to present news and information on various aspects of the BITNET wide area network. I am a guest columnist this month since our normal columnist Dr. Philip Baczewski is off at Stanford University learning all about NeXTs. He will return in the next issue.

BITNET History

As we look back in this Centennial Issue, I thought it would be appropriate to take a little tour of the history of BITNET. BITNET started operation on May 5th, 1981 when a 9600 baud leased line was put in place between the City University of New York and Yale University. In February 1984, the first international connection was made in Rome. Since this time Europe has developed its own major segment of BITNET known as EARN (European Academic Research Network). Then in September 84, Canada formed their own part of BITNET known as NetNorth. Tokyo connected to BITNET on July 1st, 1985. On October 6th, 1985, NTSU joined BITNET as the 282nd site. In 86, Mexico was connected. In the current set of routing tables, approximately 3300 nodes are defined.

In the early days of the network, there were only IBM Mainframes. Eventually software was written to allow VAXes, Cybers, and some Unix machines to connect to the network. Currently, VAX is the most popular machine type on BITNET though there seems to be some discussion whether there are more IBM or VAX users on the network.

According to BITNET lore, the early network had a whole set of incompatible servers which lead to many problems. Then Robert Hernandez and Eric Thomas wrote a program called LISTSERV which became the standard for mailing list servers. A little later on NETSERV and RELAY were also written. Now BITNET has a whole set of incompatible user directory (name) servers. Hopefully, in the near future we will see another standardizing process for these servers.

Topology wise the network was tree structured for many years. Then starting in 1988, THENET (Texas Higher Education Network) did a matrix interconnect that greatly improved the BITNET network in Texas. At roughly the same time, Princeton developed a version of the BITNET software, known as BITNET Phase II, that could use the Internet to transport BITNET data. BITNET Phase II has been installed on the BITNET backbone now and this backbone is matrix interconnected. Work is currently being done on something known as BITNET Phase III.

BITNET has grown over the last 9 years. With the merger of BITNET with CSNET and the regionalization proposal being considered by the CREN board, the future of BITNET looks promising. For more information on these topics, see the BITNET Connection in the November/December 1989 *Benchmarks* and the March 1990 *Benchmarks*. §

Finally, on June 1st of this year, the plug was pulled on the ARPANET. The most interesting part of it was that its removal went almost unnoticed among Internet users. MILNET still lives and the DoD has developed a new network called the Defense Research Internet (DRI) that replaces the duties of the ARPANET. Though ARPANET has faded into history, its child the Internet is growing exponentially and will be the premier network of the 1990s. §

Report on the Sixth Conference on Computers and Writing

By Michael Holcomb, UT Austin Graduate Student

The Sixth Conference on Computers and Writing, held at the futuristic Radison Hotel in Austin, May 17-20, 1990, was a successful four days of networking. Panels convened in three rooms simultaneously, so that in all, 98 papers were presented and entertaining speeches provided with each evening's dinner.

The majority of the papers concerned the use of computers in writing programs such as Freshman Composition. For example, William Van Pelt discussed the ways the computer environment changes the student-teacher relations. Pamala Gay showed that the computer is not a neutral writing tool that can empower basic writers by itself. Gay and others reported that the social organization of the classrooms changed when the computer was introduced. On-line dialogue with pseudonyms allowed the students to write with they really thought — with sometimes startling results.

Roger Easson discussed the social implications of computer literacy projects. He pointed out that the US ranks 11th in literacy as a nation and stated that underfunding education

is a political objective. Easson maintained that an educated portion of society was able to oppose a war and cause a president to leave his office — thus education is underfunded.

Strictly technical papers included that of Joanne Gates, who distributed sources and explained the use of Shakespeare On-line. Noel Williams of the University of Sheffield (UK) explained his disk-based hypertext conferencing tool. Feroza Jussawalla reported that her use of *Time* and *Newsweek* writing programs caused students to engage with important social issues.

Michael Campbell reported on his subversive approach to Robert Pinsky's interactive computer novel *Mindwheel*. Campbell showed that,

by choosing to spend time in a particular "room" and conversing with the minor "characters" found there (against the advice of the story's narrator), he demonstrated that reading is non-sequential, non-linear; as readers, we pay attention to what interests us, helping to create the works we're reading.

All of the many papers presented provided benefits to writing or research programs in one way or another. Each of the abstracts was published in a 144-page small-book, available from the Computer Research Lab, UT Austin. Next year's conference — the seventh — at the University of Southern Mississippi in May '91 promises to be just as informative. §

LIST of the Month

Each month we will highlight one of the BITNET LISTSERV Special Interest Group (SIG) mailing lists. This month's list...

ROOTS-L@NDSUVM1

Coordinator: Alf Christophersen (CHRISTOP@NORUNIT)

Genealogical Issues: Tools, techniques, and requests for information on genealogical research. The list may also be helpful in doing research by sharing information on specific ancestors, cooperative research, etc.

To subscribe to ROOTS-L, send the following command via interactive message or as the first line of a mail message to LISTSERV@NDSUVM1:

SUB ROOTS-L <firstname lastname>

ROOTS-L is also available in ANU News on the VAX under the name SOC.ROOTS (the USENET name of the group).

1990 Summer Short Courses

Academic Computing Services
University of North Texas
Computing Center

The Computing Center is offering the following short courses for the 1990 summer semesters. Please pre-register to attend (a registration form can be found at the end of this issue). A maximum of 10 people will be admitted to each of the courses held in ISB 110. A maximum of 7 people will be admitted to each of the courses held in the Graphics Lab. A maximum of 8 people will be admitted to each of the courses held in ISB 123.

PLEASE NOTE: Faculty and students have first priority to register for these classes.

MAINFRAME COURSES

1. **Introduction to MUSIC/SP** - MUSIC/SP is an interactive operating system employed by academic users to access the Academic HDS/8083 IBM-compatible mainframe computer at UNT.

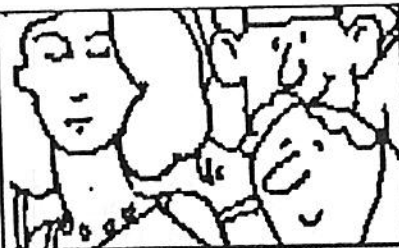
Introductory sessions to MUSIC/SP will be held in Room 110 of the Science Library (ISB) on a bi-weekly basis. **NO PRE-REGISTRATION IS REQUIRED FOR THESE COURSES.** Consult the **HELP DESK** (565-4050) for a schedule of classes and/or to request a class on a specific day. All courses will be taught by Help Desk staff.

MICROCOMPUTER COURSES

1. **Introduction to Microcomputer Labs:** ISB 110, Willis Library, Graphics Lab - Special emphasis is placed on the unique features of networked microcomputers in these labs.

A one-hour session to be held in the Science Library (ISB 110):

- Wednesday, July 11: 3:30-4:30 p.m. Instructor: Staff§



BENCHMARKS FORUM

BENCHMARKS FORUM is intended to serve as a vehicle for answering questions that may be of general interest to the user community. If you have a question, please send electronic mail to the Benchmarks editor (BITNET: AS04@UNTVM1) or write it down and drop it by the Computing Center. We will try to answer it in the next issue.

Question: Why don't you people in the Computing Center spend time doing things that need to be done around campus instead of producing this newsletter?

Answer: Glad you like our newsletter. :) Actually more would be lost than gained if the newsletter were scrapped. *Benchmarks* is the vehicle with which the Computing Center informs the academic and administrative communities about changes in policy and procedures as well as current computing concerns/events. One person is charged with its production — the editor. Contributing authors usually write articles in their spare time (i.e. at night or on weekends) or while they are waiting for something such as programs to execute.§

Benchmarks Reader/User feedback is encouraged. Send all letters, suggestions, etc to (AS04@UNTVM1), FAX 817-565-4060 or to the Benchmarks Editor at:

Academic Computing Services
University of North Texas
Computing Center
NT Station,
Box 13495
Denton, Texas 76203



WordPerfect Users Group Report

By Sandy Franklin, Microcomputer Support Staff Member

The WordPerfect Users Group met June 22, 1990, in Marquis Hall, Room 105 during the noon hour. The Users Group is open to any interested faculty, staff, or students who wish to share information or ask questions about the WordPerfect products supported by Microcomputer Support.

I talked about the WordPerfect Users Conference I attended in Orem, Utah, June 11-13. I purchased five VCR training tapes that are now available for checkout from Microcomputer Support (ISB 224/249, phone 2316). They include instruction on the following topics for WordPerfect 5.1: Forms/Labels and Equation Editor; Macro Language; Merge; Tables; Tips and Tricks.

I also distributed copies of the handout from the Equation class showing samples of Equations using the Equation Editor, copy of the handout from Forms/Labels class with instructions for creating an invitation with an 8 1/2 x 11 sheet, 2 page program, etc. mailing labels, envelopes, and letterhead; and a copy of the handout from the WP Tips and Trick class.

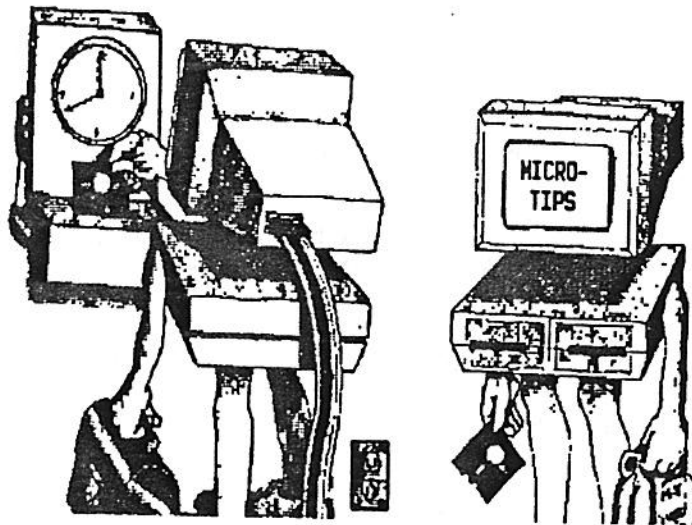
Also, on the agenda, was a "fix" for 1-up labels for Epson Printers. When designing the paper size and type, adjust the Text Alignment like this:

Text Alignment - Top - 0.45" Down
- Side 0"

Delores Argo from Petroleum Accounting reported a problem she resolved with help from WordPerfect Support. In the primary file, 5.0 required ^N^P^P to cause the second

dary file to get another record, but continued using the same primary file. WP 5.1 read her old 5.0 file commands and executed them perfectly. However, when she attempted to create a new primary file in WP 5.1 and used the same sequence of codes (^N^P^P) the program only read every other record. WordPerfect now says that only the ^P code is needed to perform the same function in WP 5.1.

The next meeting of the WordPerfect Support Group will be July 20, 1990, in Marquis Hall, Room 105 from 12 noon to 1 p.m. Since the Personnel Office is using the training lab for typing tests, we have to quit at 1 p.m. The August meeting will be August 10, 1990, instead of August 17 because of the semester break. The September meeting will be September 21, 1990. See you there! §



This column is intended to serve as a forum for sharing useful tips on making more productive use of microcomputers. If you have a tip that you feel may be of use to campus users, submit it to the Benchmarks editor for possible inclusion in a future issue.

News From Micro Maintenance

By Jim Curry, Director of Micro Maintenance

Before ordering equipment from the Micro Maintenance Shop (MMS), remember to call and request a new price sheet. Price sheets are updated periodically, and your old one may not reflect the current pricing or equipment in stock.

Current crisis: heat — for reliable operation PCs should not be operated outside of the range of 65-75 degrees F. File servers should be limited to 80 degrees max. These figures are conservative compared to manufacturers' minimum and maximum ratings and represent MMS observations of operating environments that are conducive to reliable operation. File servers or workstations used when it is too hot or cold typically become "flaky." Sudden, complete loss of data can occur. §

New Kermit Installed on the VAX

By Billy Barron, VAX System Manager (BITNET: BILLY@UNTVAX)

A new version of Kermit-32 has been installed on the VAXcluster. A couple of new features are available.

The first feature is the ability to set the blocksize on a binary upload to the VAX. The command is **SET FILE BLOCKSIZE n**, where **n** is the blocksize in bytes. This is useful in those cases where you must have a certain blocksize on the resulting VAX file.

Extended length packets are now supported. This is a very useful feature. By default Kermit uses 94 byte packets to send data. However, on reliable lines (i.e. with very little phone noise), you can greatly increase your throughput by having longer packets. VAX Kermit now supports up to 1000 byte packets. In theoretical models, the basic Kermit algorithm (94 byte packets) has an efficiency rate of 85.6% on an average text file¹. Meanwhile, using 1000 byte packets, Kermit achieved an efficiency rate of 93.8%. However, in reality the efficiency rates are much lower due to the speed of light, response time on computers, etc. Some benchmarks showed that at 2400 baud, 73% efficiency was typical for the standard Kermit algorithm. Benchmarks on the 1000 byte packets showed an efficiency rate of 90%.

To use the extended length packets, you use the **SET SEND PACKET 1000** command on the sender Kermit and the **SET RECEIVE PACKET 1000** on the receiver Kermit. Please note that not all versions of Kermit support this command. For example, Procomm does not and MS-Kermit does.

¹ da Cruz, Frank and Christine Gianone, "How Efficient is Kermit?", Kermit News, Columbia Univ, Issue 4, June 1990

HELP NETWORKS Topic Expanded

By Billy Barron, VAX System Manager (BITNET: BILLY@UNTVAX)

The NETWORKS help topic on the VAX has been greatly expanded. It now contains subtopics on every known network in the world.

A new Countries subtopic has also been added. This Countries topic contains a subtopic for every nation in the world that has a computer network. For example, to see what networks are available in Canada, type:

HELP NETWORKS COUNTRIES CANADA

To help reduce the number of first level help topics, the help topics ARPANET, BITNET, and THENET are being phased out and replaced by the topics NETWORKS INTERNET, NETWORKS BITNET, and NETWORKS THENET respectively. §

BEST OF THE BBS



Edited by Mark Thacker,
VAX Programmer/
Operator (BITNET:
MARK@UNTVAX)

Welcome to the Best of the BBS column. This column highlights some of the more interesting and useful discussions on the UNT BBS. For those of you not familiar with the BBS, here is how to log into the UNT BBS.

- Sign-on by typing **CALL DEC** at the LAN prompt and then entering **BBS** as your Username at the VAX prompt.
- If you are already logged-on to the VAXcluster, type **BBS** at the \$ prompt.

The opinions expressed in this column do not necessarily reflect the views of Academic Computing Services or the Computing Center. Also, information in Best of the BBS has not been checked for accuracy.

Scanners for the Macintosh on Campus?

#43908 7-JUN-1990 14:55:17.63

Subject : Apple Scanner

Help! Help! Help!

Does anyone (I mean ANYONE) know where I can get access to an Apple scanner to capture a few pages of text for word processing? I am located on the campus, but I would be willing to travel around the Metroplex somewhere to use the equipment.

#43962 Reply to #43908 8-JUN-1990 08:09:37.33

Subject : RE: Apple Scanner

The Graphics Lab has a text scanner available for use by students and faculty. True the text scanner is hooked up to the PC, but it is easy with the equipment in the Graphics Lab to convert it over to Mac format.

386 or 386SX, Which One For Me?

#43762 Reply to #43728 4-JUN-1990 20:08:50.41

Subject : RE: Cheap UNIX for PC's
Would an individual be limiting himself a lot by buying a 386SX rather than spending the several hundred dollars more to get a full-blown 386?

I am talking about individuals who use the machines the way most of us do, with spreadsheets and statistical packages probably being the most demanding uses on the machine.

#43766 Reply to #43762 4-JUN-1990 21:35:28.85

Subject : RE: i386 vs i386SX

The beauty of the i386SX is that it will run the next generation 32bit software. At the same clock speed the i386SX is no faster than a 286 at executing 16 bit code, in fact it is a hair slower. (*Computing Center personnel disagree with this statement - ed.*) If you want to have a machine that is less likely to become obsolete the SX might be a good deal since the 286 can not run i386 code at all.

Intel is really pushing the i386SX now since they are the only source of the chip and the 286 is made by several companies. If you are only running DOS and applications you would probably be better off getting a fast 286 and spend the money you save on a math coprocessor. A 286/287 combo is going to compile your spreadsheets faster than a 386 with out a math unit. If you want to keep all of your options open like

VAXCLUSTER USAGE STATISTICS

May Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. User programs	Compiled Programs	15 15:37:37.92	82.1
2. NEWS	ANU News Utility	1 09:36:24.85	5.1
3. PACSPROCESS	Accounting	0 10:12:10.60	1.5
4. BACKUP	Disk Backups	0 09:14:20.54	1.4
5. NNTP_TCPWIN	News Transfer Utility	0 08:46:18.59	1.3
6. BBS	Bulletin Board	0 04:33:41.92	0.7
7. EDT	Editor	0 04:30:37.84	0.7
8. MAIL	VMS Mail	0 03:31:35.29	0.5
9. PASCAL	Pascal Compiler	0 03:12:25.77	0.5
10. LOGINOUT	User login	0 02:55:12.39	0.4
Total		27 13:56:23.32	

May Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	45998	15.4
2. User programs	Compiled Programs	38482	12.9
3. SET	VMS Utility	38017	12.7
4. DIRECTORY	VMS Utility	30583	10.2
5. DELETE	VMS Utility	21271	7.1
6. SEND	Bitnet Message Utility	11690	3.9
7. TYPE	VMS Utility	9893	3.3
8. EDT	Editor	9720	3.2
9. SYSLOGIN	User Login	9488	3.2
10. SHOW	VMS Utility	6678	2.2
Total		299434	

UNIX and the 32bit version of OS/2 when it comes out you should spend the bucks for at least a SX. Of course the i386 would be even better if you can swing it. §

WAM in Dallas

The 1990 Winter Annual Meeting (WAM) of the American Society of Mechanical Engineers (ASME) will be held at INFOMART in Dallas November 25-30. Five presentations tracks will be presented:

- Track 1: Advanced Computation, Analysis and Methodologies
- Track 2: Artificial Intelligence and Expert Systems
- Track 3: Computer Integrated Engineering and Manufacturing
- Track 4: Databases and Information Management
- Track 5: Advanced Architecture, Supercomputing and Parallel Processing

For more information, contact Ms. June Leach, ASME, 345 47th Street, New York, NY 10017 (212) 705-7795. §

COMPUTING TECHNICAL SERVICES

Mainframe Performance Statistics

Operating Systems Performance Statistics for May

CPU	SYSTEM	Planned Production Hours	Production Hours Achieved	System Uptime
ACAD	VM/XA2	221.00	221.00	100.0%
ACAD	VM/SP5	719.00	576.23	80.1%
ACAD	MUSIC/SP	689.82	545.53	79.1%
ACAD	MVS/JES2	719.00	570.47	79.3%
ACAD	COMPLETA	708.04	558.68	78.9%
ADMN	MVS/JES2	744.00	743.00	99.9%
ADMN	COMPLETA	297.00	297.00	100%
ADMN	ADABASA	713.93	710.24	99.5%

- The ACAD CPU achieved 100% uptime in May.
- The HDS/7360 DASD achieved 100% uptime in May.
- The HDS/7380 DASD achieved 100% uptime in May.
- The ADMN CPU achieved 100% uptime in May.
- The HDS/7360 DASD achieved 100% uptime in May.
- The HDS/7380 DASD achieved 100% uptime in May.
- The EMC Solid State Disk achieved 100% uptime in May.

Key Causes Of Lost Productivity In April: ADMN CPU

Miscellaneous

- | | |
|--|-------------------|
| 1. Operator mistakes in recycling ADABASA. | 2.44 HOURS |
| 2. Systems software development. | 1.25 |
| TOTAL | 3.69 HOURS |

Key Causes Of Lost Productivity In April: ACAD CPU

CPU, Tape, and Disk Subsystems (HDS)

- | | |
|---|-------------|
| 1. Upgrade of microcode on 8083 MPU to resolve VM/XA installation failures. | 34.67 HOURS |
| 2. Research and analysis of abortive attempts to start up VM/XA in MP mode on the 8083 MPU. | 22.60 |

TOTAL 57.27 HOURS

Miscellaneous

- | | |
|---|-------------|
| 1. Resolving incompatibility of VM/XA software while installing this IBM product. | 72.16 HOURS |
| 2. Scheduled install of IBM VM/XA software. | 25.00 |
| 3. Applying required system maintenance to VM/XA. | 9.01 |
| 4. Abortive attempts to run VM/SP under VM/XA in virtual=real (V=R) mode. | 7.87 |
| 5. Applying system maintenance to synchronize VM/SP TOD clocks with VM/XA TOD clocks. | 6.18 |
| 6. Undetermined causes for systems restarts. | 1.53 |

TOTAL 121.75 HOURS

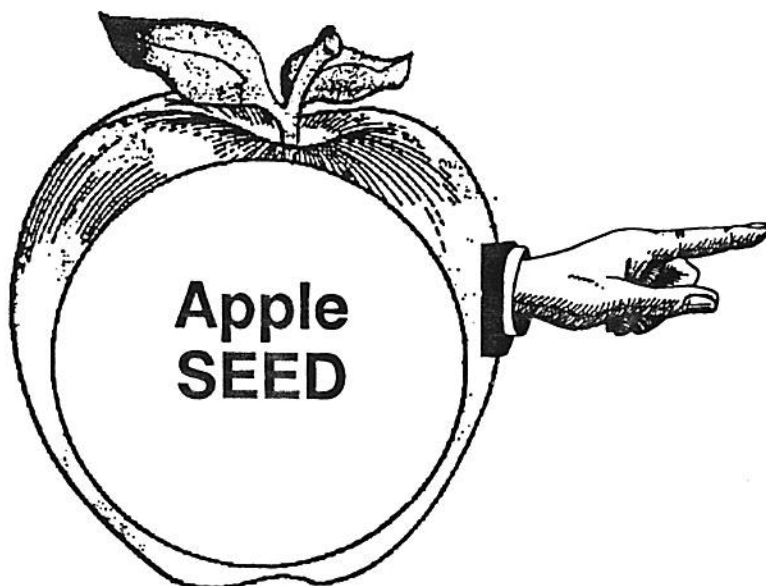
GRAND TOTAL 179.02 HOURS

ACADemic (HDS) Program Hit Parade

May Top Ten Programs : Frequency Of Runs			
Program	Description	#of Runs	% of Total
1. PGM=*DD	Compiled Program	6810	18.9
2. IEWL	Linkage Editor	6298	17.4
3. IDCAMS	VSAM Utility	3809	10.5
4. SASLPA	SAS	3208	8.9
5. IEV90	Assembler H	2561	7.1
6. IEBGENER	IBM Utility	1998	5.5
7. SPSSX	SPSS-X	1739	4.8
8. IKFCBL00	VS COBOL Compiler	1353	3.7
9. IGYCRCTL	VS COBOL2 Compiler	1238	3.4
10. SPCHLCOB	COBOL2 Report Writer	1160	3.2

May Top Ten Programs: CPU Seconds Used			
Program	Description	CPU Seconds	% of Total
1. PGM=*DD	Compiled Program	67598	33.3
2. SASLPA	SAS	38553	19.0
3. COMPLET4	Academic COM-PLETE	24094	11.9
4. SPSSX	SPSS-X	21063	10.4
5. ADARUN	ADABAS Utility Module	9865	4.9
6. SSS4001	Operations Automation	5174	2.5
7. SPCHLCOB	COBOL2 Report Writer	4812	2.4
8. ISTINM01	VTAM Utility	4428	2.2
9. IEWL	Linkage Editor	2556	1.3
10. IEV90	Assembler H	2512	1.2

The programs listed in this section were used the most frequently on the HDS ACADemic CPU during May, 1990. Please Note that ACAD is the official designation of the HDS/8083 CPU that is dedicated to faculty and student use. The HDS/8083 CPU reserved for University administrative purposes is termed ADMN.§



The next meeting of AppleSEED is planned for July 24, 1990 at the Westin Galleria. The discussion will be on Developer Tools for the Macintosh. Speakers and their topics will be:

- Charlie Lindahl, UT Arlington — Use of LISP to prototype user interface.
- Baylor University staff — MPW.
- Dennis Carellil — Aranda by Soft-Set Technology.
- Michael Palmer, EDS — Development with Smalltalk.

For further information call or write Debbie Pletz, Apple Computer, Inc., 12770 Merit Drive, Suite 1000, Dallas, Texas 75251 (214) 770-5865.§

COMPUTING TECHNICAL SERVICES

Disk Backup Schedules

SYSTEM	BACKUP	DESCRIPTION
Administrative MVS/SP	Daily	Monday - Friday around 7 p.m. (after COM-LETE is shut down) & on Saturday & Sunday if COM-LETE has been up that day.
	Weekly	Full pack dumps taken each Sunday morning.
	Monthly	Full pack dumps taken on the first day of each month.
Academic MVS/SP	Daily	Monday - Sunday during the early hours of the morning.
	Weekly	Full pack dumps taken each Sunday.
	Monthly	Full volume dumps taken on the first day of each month.
MUSIC/SP	Daily	Wednesday - Monday starting at 4 a.m. and lasting about 30 minutes.
	Weekly	Tuesday mornings at 3 a.m., these last about 2 hours.
	Semester	Once a semester, a permanent backup is taken.
VM/SP	VM Weekly	Early every Wednesday morning.
	CMS mini-disks	Daily backup performed early every morning. Weekly backup every Wednesday starting at 3 a.m..
VAXcluster	Daily	Incremental backups are performed Monday - Thursday at 6 p.m. Saturday & Sunday at 5 p.m.
	Weekly	Full backups are performed every Friday beginning at 8 a.m. and generally last all day.
	Monthly	A "stand alone" backup is performed monthly. Dates and times are given in the system log-on message.
	Semester	Once a semester, a permanent backup is taken.

A full description of the system backup procedures can be found by typing **HELP BACKUP** on MUSIC/SP or the VAXcluster.



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Richard A. Harris, Associate Vice President for Computing
Steve Minnis, Director of Computing Technical Services
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PHONE: _____ MAILING ADDRESS: _____

SUPERVISOR SIGNATURE _____

I wish to attend:

● **Introduction to Microcomputer Labs (ISB 110):**

____ Wednesday, July 11: 3:30-5:30 p.m.

I would like to see more classes offered: ____ on weekends; ____ at night.

The classes I am interested in are: _____



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